DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1919, No. 25

VOCATIONAL EDUCATION

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[Advance sheets from the Biennial Survey of Education in the United States, 1916-1918].

WASHINGTON
GOVERNMENT PRINTING OFFICE
1919

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VOCATIONAL EDUCATION.

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IMPORTANT FACTORS OF PROGRESS.

The two years under review constitute a period of unprecedented progress in vocational education, since it is probably conservative to say that the tangible results accomplished equal those of any decade preceding. The important factors in this development may here be noted, briefly, as follows:

(1) Most important of all has been the culmination of a 10 years' campaign for securing Federal aid for vocational education, resulting in the enactment of the Smith-Hughes law and the creation of the Federal Board for Vocational Education.

(2) Second in importance only to the activities under the Smith-Hughes Act has been the gigantic experiment in industrial education conducted by the Committee on Education and Special Training of the War Department. The practical working out of this plan for training the "fighting mechanic" will undoubtedly be regarded as one of the achievements of the war.

(3) The Emergency Fleet Corporation of the United States Shipping Board developed a unique and comprehensive plan for greatly increasing the available supply of skilled mechanics for the shipyards. The need assumed such large proportions and the emergency was so threatening that those in charge of the work were forced to devise a special system of teacher training, which involved original and suggestive methods and plan of organization.

(4) Important contributions were also made by a number of other governmental and other agencies, including: The Navy Department; the Department of Labor, through its Training and Dilution of Labor Service; the Council of National Defense, through the War Industries Board and other channels; the National War Work

Council of the International Young Men's Christian Association and related organizations; the Bureau of Education through a series of conferences, by bringing about the formulation of a constructive program of industrial arts instruction, and in other ways.

(5) During the past two years there has been an unprecedented reliance upon the machinery of popular education for the accomplishment of undertakings of the gravest importance, not to this Nation only, but to the world. This has been true not only in official circles, but nearly every individual and every organization that has had a program for helping to win the war has conceived of the public-school system as an indispensable and prominent feature of the measures proposed for bringing about the desired results. It is significant that a conception of the intimate relation between education, our recent achievements as a Nation, and the future security of the Republic has caught the popular imagination, and is reflected in the public statements of responsible officials and other leaders of thought. It is of the greatest significance also that the great bulk of this concerted educational effort, certainly one of the phenomena of history, has found its inspiration and its expression in terms of the vocational phases of education.

(6) There has been an observable increase in both the amount and the proportion of attention given to the problems of vocational education in public discussion. In this increased tendency to think and talk and write in terms of vocational education, it is believed that evidence can be found of a disposition to consider "practical" education and so-called "cultural" education as complementary, rather than alternative, as some alarmists would have it.

(7) This widespread popular interest in educational matters has been accompanied by a new and more critical appraisement of school programs and courses of study and an inquiry as to just what service is being rendered to children. New emphasis has been given to the meaning and aims of education; education is being thought of more and more as something having a definite purpose, other than simply preparation for more education; there is increasing demand that this purpose shall have more definite relation to life and the means and manner of living. The increased emphasis on definition of aims and purposes of types of school, curricula, and special subjects of study, has undoubtedly been stimulated by the operation of the Smith-Hughes Act. The very fact that schools of certain types have been set up, with definite aims declared, has raised these inquiries as to aims and purposes with respect to other schools which have been accepted hitherto without question.

(8) Another significant evidence of progress is to be noted in the gradual diffusion of the idea that secondary education should be thought of as something to be adapted to the needs of young per-

sons of ages 12 to 18 years approximately, rather than something whose content and methods should be determined by the fact that its students are expected at entrance to have completed the prescribed routine of a certain number of grades, and are expected at graduation to meet the arbitrary entrance requirements of higher institutions. Out of this conception comes the growing interest in the junior high school, the continuation school, the cooperative school, and, in part at least, vocational guidance.

(9) More general recognition of the fact that the work of teaching demands special fitness and preparation is one of the encouraging signs to be noted. There is a technic in teaching, as there is in a skilled trade. As an indication of the extent to which this view is spreading, it is worthy of note that during the summer of 1918 there were special classes for the preparation of teachers of vocational subjects conducted under the direction of State boards or departments of education in 26 States, with length of session ranging from 2 to 10 weeks. At the same time it is becoming more and more apparent that the average mechanic, with his lack of education and limited opportunity for acquiring a broad outlook on life, can not with certainty be made into a skillful and inspiring teacher through the medium of these short courses alone.

(10) Our experience in the great war has served to emphasize one serious national weakness, to which, however, attention had frequently been called before. The old-time, all-round apprenticeship system has been allowed to disappear in certain important trades, without any adequate provision for something to take its place, either in industry or in education. No effective steps were taken to insure a continual supply of all-round mechanics, even in those trades in which the need was recognized.

(11) One of the serious shortcomings in the program for vocational education in this country is that, as yet, no adequate measures have been taken looking toward the proper coordination of compulsory-education legislation, vocational-education legislation, and child-labor legislation. There can be no justification for neglecting the fact that in most States a hiatus exists between the close of the period of compulsory schooling and the beginning of the period when young persons are permitted by law to work for wages. The dangers both to society and to the youth are obvious.

(12) There has been a noticeable tendency in public school manual training shopwork toward the industrial point of view, in subject matter as well as method. "Projects, shop experience, community service, jobs, not 'models' are the common objects of discussion" on the programs and in the conferences of manual training directors and instructors.

(13) There has been a notable increase during the past two years in both the volume and the quality of textbooks and reference material in practically the entire field of vocational education. A number of special activities during the war period had the effect of stimulating immensely the production of this material.

(14) Some indication of the development of industrial education in the United States during the past few years may be observed by comparing the "Directory of Vocational Education" issued by the Bureau of Education in 1914 with that issued in 1918. The former was a leaflet consisting of 6 pages of names and addresses; the latter contains 29 pages and a supplement. Obviously this comparison does not give a direct measure of the progress in vocational education, since the published lists of both dates are known to be incomplete. Nevertheless, certain facts are quite suggestive.

In 1914 a systematic attempt was made to compile a complete list of "Schools in which trades are taught." This designation was used in preference to "trade schools," for the reason that a considerable number of schools which are not properly classed as trade schools maintain departments or classes in which real trade instruction is given. The list as published is accompanied by the following note:

> In the above list are included schools offering one or more courses which prepare students for the mechanical trades and industries, by teaching the technic of the occupation in whole or in part, with the expectation that the training given in such course shall serve to shorten the usual period of learning or apprenticeship in the occupation.

The number of schools listed on the basis of the returns from a widely distributed questionnaire was 86, located in 19 States.

A similar inquiry made in 1918 resulted in the listing of 285 schools, located in 40 States. Recognizing the difficulty of defining a trade school or a trade class in such terms as will yield figures giving an accurate account of the progress taking place in this important field, the 1918 inquiry was accompanied by the following note:

> It is intended to include in this list those schools, public and private, which offer one or more day courses which prepare students, male or female, for the mechanical trades and industries, by teaching the technic of the occupation in whole or in part, with the expectation that the training given in such course shall serve to shorten the usual period of learning or apprenticeship in the occupation.
>
> This expectation should be justified by the provision of conditions which look definitely toward this end, and should include at least the following: (*a*) The students should spend not less than 10 hours (60 minutes each) per week in the practical shopwork or other technical processes of the occupation; and (*b*) the instructor should have had practical experience as a wage-earner in the occupation for which he is giving instruction.

In 1918 also, for the first time, an attempt was made to compile a complete list of "Trade continuation schools." Of these, 144 are

listed, located in 29 States. The inquiry was accompanied by the following note:

> It is intended to include in this list those schools, public and private, which offer one or more courses, day or evening, for the benefit of students, male or female, who seek, by means of these courses, to prepare themselves for useful employment or for promotion in their present employment, including schools offering cooperative or part-time classes, in which employed persons attend school a certain number of hours per week during working hours, or alternate between school and employment.

The 1918 directory also includes a list of State officials having charge of the administration of vocational education in the several States. The number of persons listed in this section is 157, representing all of the 48 States, as well as the outlying possessions of the United States. With the exception of perhaps a score of positions in six or eight States, this entire official personnel has come into existence during the past four years. The same statement is true also of the official staff of the Federal Board for Vocational Education, now numbering upwards of 500 individuals.

THE FEDERAL BOARD FOR VOCATIONAL EDUCATION.

The Smith-Hughes Act was signed by President Wilson on the afternoon of Friday, February 23, 1917, while the National Society for the Promotion of Industrial Education, to whose efforts this legislation is largely due, was holding its tenth annual convention in Indianapolis. The appointive members of the board were nominated by the President on June 29 of the same year, and confirmed by the Senate on July 17. The first meeting of the board was held on Saturday, July 21, in the office of the Secretary of Agriculture in Washington.

Under the Smith-Hughes Act Federal appropriations ultimately aggregating over $7,000,000 per annum have been made available for cooperation with the States in the promotion of vocational education in agriculture, in trades and industries, and home economics, including the preparation of teachers. The principle of Federal aid through the States to education in institutions of subcollegiate grade has been established.

Its early enactment was strongly urged by President Wilson in addressing Congress in December, 1916, as—

> of vital importance to the whole country, because it concerns a matter too long neglected, upon which the thorough industrial preparation of the country for the critical years of economic development immediately ahead of us in very large measure depends. * * * It contains plans which affect all interests and all parts of the country, and I am sure that there is no legislation now pending before the Congress whose passage the country awaits with more thoughtful approval or greater impatience to see a great and admirable thing set in the way of being done.

NEW EDUCATIONAL POLICIES.

As an expression of educational policy, the new act embodies some important departures from previous legislation. It makes provision for the training within the schools of a large group of our population unreached directly by the Federal Government. On the other hand, by offering instruction along vocational lines and of subcollegiate grade, it supplements the Morrill Act, the expressed purpose of which is to maintain colleges "to teach such branches of learning as are related to agriculture and the mechanic arts * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." On the other hand, since it contemplates a system of training in the schools, it also supplements the Agricultural Extension Act of 1914, in which the service provided is "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in State colleges in the several communities." Since it imposes definite requirements as to the training of teachers, it also represents a material extension of authority over the purely permissive provisions of the Nelson amendment of 1907.

The Smith-Hughes Act creates a Federal Board for Vocational Education. This board consists of seven members, including the Secretaries of Agriculture, Commerce, and Labor, and the United States Commissioner of Education, ex officio, with three members appointed by the President and confirmed by the Senate, ultimately for a term of three years each. One of the appointed members is a representative of the manufacturing and commercial interests, one of the agricultural interests, and the third of those of labor. The board selects its own chairman each year.

The Federal board is charged with the administration of the act, the details as to the care of funds, the certifying of the States, etc., in general plan resembling the legislation for the agricultural colleges and experiment stations. In addition it is empowered to make, or have made, investigations and reports to aid the States in the establishment of vocational schools and classes and in giving instruction in agriculture, and the trades and industries, commerce and commercial pursuits, and home economics. These studies include agriculture and agricultural processes and the requirements upon agricultural workers, similar studies as regards the trades, industries, and commerce, home management, domestic science, and the study of related problems, and the principles and problems of administration of vocation schools and of courses of study and instruction in vocational subjects. In the discretion of the board, the studies concerning agriculture may be made in cooperation with or through the Department of Agriculture. Similar cooperative arrangements may

be made with the Departments of Labor and Commerce for industrial subjects, while the studies of the administration of vocational schools, curricula, and methods of instruction in vocational subjects may be taken up in cooperation with or through the Bureau of Education. An appropriation of $200,000 per annum, available from the date of passage of the act, is made to the board for its expenses.

STATE BOARDS FOR VOCATIONAL EDUCATION.

To cooperate with the Federal board in carrying out the act, each State when accepting its provisions is to designate a State board of at least three members. The State board of education or some board having charge of the administration of public education or of any kind of vocational education may be designated as the State board, or an entirely new board may be created. Of the 48 States, 35 have designated the State board of education or the State department of public instruction; 11 have designated a State board for vocational education or industrial education; 1 a State board of agriculture; and 1 a State high school board.

The State board is to prepare plans for the approval of the Federal board, showing the details of the work for which it is expected to use the appropriations. These plans it is specified must show the kinds of vocational education contemplated, the kinds of schools and equipment, courses of study, methods of instruction, and the qualifications and the plans for the training of the teachers and agricultural supervisors. In all cases the work must be conducted under public supervision and control.

The plans of expenditures for salaries in agricultural and industrial subjects must show that the controlling purpose of the education is to fit for useful employment, that the training is of less than college grade, and that it is designed to meet the needs of persons over 14 years of age who have entered upon or who are preparing to enter upon agricultural or industrial work.

The Federal appropriations to the States are divided into three distinct groups, providing, respectively, for the payment of salaries of teachers, supervisors, or directors of agricultural subjects; for the payment of salaries of teachers of trade, home economics, and industrial subjects; for the preparing of teachers, supervisors, or directors of agricultural subjects, and of teachers of trade and industrial and home economics subjects.

The main initial appropriation for salaries in agricultural subjects is $500,000. This is increased by $250,000 per annum during the next six years and then by $500,000 per annum during the next two years, making an appropriation of $3,000,000 for the fiscal year 1926 and annually thereafter. Like appropriations are made for salaries in industrial subjects.

The main appropriation for preparing teachers and supervisors is likewise $500,000 for the first year, but increases to $700,000 and $900,000, respectively, for the next two years, and then becomes $1,000,000 per annum thereafter. The Federal appropriations for teacher training must be divided among agricultural, trade and industrial, and home economics subjects, no one of these subjects being granted more than 60 nor less than 20 per cent of the State's allotment for any year.

The training of the teachers provided for will throw a very heavy burden of responsibility on our higher technical institutions and particularly the land-grant colleges. These institutions have been very successful in training technical experts who have contributed in large measure to the success of our industries. They have not as yet paid any large attention to the training of teachers for secondary schools of the strictly vocational type. The pedagogy of this class of education is yet in its preliminary stages. It evidently will not do simply to copy what has been worked out abroad. There is therefore great incentive for men of original thought and inventive skill to enter this comparatively new field of teacher training.

ACTION BY THE STATES.

Up to January 1, 1918, 48 States accepted the Smith-Hughes Act either by specific provisions of the legislatures or by acts of the governors and by that date the plans of the 48 States had been examined by the Federal Board for Vocational Education, approved, and the board had certified to the Secretary of the Treasury that these States were entitled to receive the allotments for the year 1917–18, apportioned by the terms of the act.

Federally aided vocational courses have been set up in agriculture in 41 States, in trade and industrial subjects in 32 States, and in home economics in 29 States; 22 States have organized courses in each of these three fields; in 46 States teacher-training courses have been organized.

The record of the States in this work is impressive, especially when it is borne in mind that the record covers an initial period of only 10 months. In Massachusetts, for example, vocational agriculture is taught in 19 secondary schools with Federal aid; trade and industrial subjects, in 36 schools; and home economics, in 29 schools. In New York the number of Federal-aided secondary schools is 4, of agriculture, 60, and for trades and industries, 40; in Pennsylvania, for agriculture, 38; for trades and industries, 131; and for home economics, 69; in California, for agriculture, 12, for trades and industries, 14, and for home economics, 14; in Indiana, for agriculture, 37, and for trades and industries, 21; in Mississippi, for agriculture,

34, for trades and industries, 1, and for home economics, 3. These States are illustrations of the widespread development of secondary vocational education.

The chief handicap in the promotion or introduction of vocational instruction was the lack of qualified teachers. This was due largely to the war emergency, many of the teachers being drafted or volunteering for service in the Army.

THE SMITH-SEARS ACT.

In June, 1918, Congress passed the Smith-Sears Act, providing for the vocational rehabilitation and return to civil life of disabled persons discharged from the military or naval forces of the United States. The act delegates to the Federal Board for Vocational Education the responsibility of reeducating the disabled men in some useful employment, after their discharge from the Army or Navy, and provides for a plan of cooperation between the board and the Surgeon General's Office, covering the work done in hospitals, in order that the men may have the advantage of a continuous and coordinated plan.

It is provided that there shall be full and complete cooperation of the several Government offices concerned with the future welfare of men discharged from the Army and Navy, including the medical and surgical services of the War Department and the Navy Department, the Bureau of War Risk Insurance in the Treasury, and the labor exchanges in the Department of Labor, and the Federal board. Each will render service in retraining and returning to civil employment men disabled in the war.

The Federal board will act in an advisory capacity in providing vocational training for men during their convalescence in the military hospitals, before their discharge from the Army and Navy, and will continue such training to finality after discharge, as the civilian agency for rehabilitation and placement in industry.

THE STUDENTS' ARMY TRAINING CORPS.

The Students' Army Training Corps represents a unique educational undertaking on the part of the Government. The work was under the direction of the Committee on Education and Special Training of the War Department. A circular of information issued by the committee stated the purpose in view as follows:

> The primary purpose of the Students' Army Training Corps is to utilize the executive and teaching personnel and the physical equipment of the educational institutions to assist in the training of our new armies. Its aim is to train officer candidates and technical experts of all kinds to meet the needs of the service. This training is conducted in about 550 colleges, universities, professional, technical, and trade schools of the country.

The corps was divided into two sections—the collegiate or "A" section and the vocational or "B" section. Of these the former is discussed elsewhere in this report under higher education.

Concerning the latter, it is to be noted that the experience of three years of war in Europe demonstrated the need of large numbers of skilled mechanics and technicians of many kinds. When the United States entered the war, therefore, and undertook the organization of an army, it soon became apparent that a plan must be devised to train mechanics quickly and in large numbers. To accomplish this result the War Department did not depend on the establishment of new schools, but utilized existing institutions which had the necessary facilities. The men, in uniform, were assigned to institutions in units of 200 to 2,000, where they were housed and fed under military discipline for periods of two months each. Military drill and industrial instruction, including shop practice, were provided in an intensive form as the regular daily routine. The initial assignments of men began work on April 1, 1918. Some idea of the magnitude of the undertaking is conveyed by the announcement that on August 1, 1918, there were 52,025 soldiers under instruction, in 35 different trades or occupations, in 144 institutions, located in 46 States and the District of Columbia. It was estimated that by the close of the fiscal year, June 30, 1919, if the plans had been carried out, more than 300,000 men would have received instruction in these courses, sufficient to make them definitely serviceable in some mechanical or technical duty in addition to their training as soldiers.

EFFECT ON EDUCATIONAL SYSTEM.

Without question the work of the Section B units of the Students' Army Training Corps will prove to have been the most significant experiment in vocational education thus far undertaken under a democratic form of government. It is too soon to appraise the results in full, but as soon as adequate reports are available, educators, and especially students of industrial education, are urged to examine them with the greatest care. It is believed that our public-school system may with profit learn a number of valuable lessons from the experience of these Army training units.

In this connection it is possible to refer briefly to two points only, but these will serve to suggest others that will develop later: (1) The experience of the Army training units seems to demonstrate the futility of short shop periods; that is, shop periods too short for the student to see work processes in complete wholes. The amount of ground that can be covered in a short course, eight weeks in length, consisting of daily periods of six or seven hours in shop, drafting room, or laboratory, proved to be greatly in excess of all expectations.

Numbers of competent observers have predicted that the results of this experience will revolutionize educational practice, not only in trade instruction classes, but in colleges and universities as well.

(2) Experience seems to indicate also that small classes, with a reasonable amount of individual instruction, are essential to accomplish the best results. Individuals vary greatly in capacity and performance, and can not be instructed efficiently in mass.

VOCATIONAL TRAINING IN ARMY HOSPITALS.

The subdivision of education in the division of physical reconstruction under the Surgeon General, United States Army, was begun in October, 1917, for the purpose of devising plans for providing educational facilities for disabled soldiers and sailors during the period of hospital treatment and convalescence. On May 20, 1918, Dr. James E. Russell, dean of Teachers' College, Columbia University, New York City, was appointed chief of the subdivision.

The work undertaken has been practical, so far as possible, and has included work needed for the hospitals. Activities include, besides repair work of various kinds, basketry, typewriting, telegraphy, academic studies, agriculture and gardening, bookkeeping, free-hand and mechanical drawing, auto repair, carpentry, cobbling, and other handicrafts. In all, more than 100 different activities have been introduced into the hospitals. Sixteen general convalescent and reconstruction hospitals have been provided for, or one in each of the 16 military districts.

The records of 516 cases which have been treated in four hospitals show 134 men able to return to full military duty, 210 fit for return to limited service, and 172 who are eligible for discharge.

In the last group, 12 are classed as helpless or institutional cases; 121 are able to return to their former occupations; and 39 will need further training to fit them for earning a livelihood.

These figures show the division of responsibility in the work of reconstruction. The task of fitting men for further military service is at present the most urgent need, because wherever an able-bodied man behind the lines can be replaced by one less fit physically but vocationally capable, a soldier is gained for active duty.

SPECIAL TRAINING IN THE SHIPBUILDING INDUSTRY.

In October, 1917, a comprehensive project of the greatest interest and importance, looking toward the training of instructors and skilled mechanics for the shipbuilding industry, was undertaken by the Emergency Fleet Corporation of the United States Shipping Board. For this purpose, an industrial training section was organized, and at its head was Egbert C. MacNary, who obtained leave of absence from his position as director of industrial education in Springfield, Mass.

The object in view was to organize a training department in each shipyard, at the head of which was placed a director in full charge of all matters pertaining to the training or breaking in of workers and general supervision of the training department. It was understood that it would be necessary to allow the director and his staff of instructors to be free from the usual duties of production foremen, in order to devote their entire time and energies to training men.

It early became apparent that the necessary expansion in the shipbuilding program depended absolutely on the creation of increased forces of skilled and semiskilled men. The country was scoured for men having knowledge of any branch of shipbuilding, and yet the supply of mechanics proved utterly inadequate to meet the demands of the Shipping Board. It was decided, therefore, that the necessary increases of working forces must be made through training men, and that the task must be undertaken immediately and on an unprecedented scale.

EXTENT OF DEMAND.

The extent of the demand for skilled workers in the shipbuilding industry was not at first generally appreciated by the public. Until recently the largest shipyard in the United States was one containing five ways. When running at full capacity each way provides employment for approximately 1,000 men, including the contributing shops and drafting rooms. At the time this training plan was undertaken, there was under construction at Hog Island, near Philadelphia, one shipyard consisting of 50 ways. The Emergency Fleet Corporation announced in October, 1918, that fully 60,000 additional men would be required within a few months in the Philadelphia district alone.

The solution of the problem evidently was to take skilled and semiskilled men from kindred trades, in large numbers, and give them short intensive courses of instruction in selected fragments of the shipbuilding trades. Since the typical foreman possesses no special skill in giving instruction to the men who work under him, the first step was to organize for the entire chain of shipyards a source of supply of trained directors and instructors.

For this purpose an instructors' training center was established in the plant of the Newport News Shipbuilding & Drydock Co., Newport News, Va. Associated with Mr. McNary and in charge of this training center was Charles R. Allen, of Massachusetts.

To this center the cooperating shipyards sent relays of selected men for courses of instruction six weeks in length. In most cases the yards sending the men paid their wages and expenses while in attendance. For one-half of each day the men were instructed in the methods and devices of teaching. During the other half they were employed in

actually instructing group of workers in the yard, under the supervision of the training staff. When the men completed this preparation they returned to their yards to set up training classes for breaking in new men and for advancing employees from their present jobs to those requiring greater skill.

Students of industrial education will await with great interest detailed reports of the means and methods employed in this project and the results achieved.

VOCATIONAL EDUCATION IN THE NAVY.

The section on education in a recent report of the Secretary of the Navy presents a phase of activity not generally appreciated by the civilian. The following passages are quoted:

> Every man in the Navy is a student, from the Admiral in the War College to the midshipman at the Naval Academy and the apprentice in the training station and afloat. The beneficial result of the whole educational system in the Navy is that theoretical knowledge is almost immediately put into practice. * * * The man who does not wish to go to school ought not to knock at any door in the naval service. The Navy is the greatest educational institution in America, and in it theory is valued only as it is put into practice. * * *
>
> The Navy offers a wide variety of industrial courses to ambitious young men. * * * In the electrical schools at the Brooklyn and Mare Island Navy Yards the course of instruction comprises machine-shop work, reciprocating steam engines, steam turbine engines, internal-combustion engines, magnetism and electricity, dynamos, motor generators, alternating currents, and the like. In the radio group there is thorough practice in the radio mechanism for receiving and sending. In the Artificer School at the Norfolk Navy Yard men are taught to be shipwrights, shipfitters, blacksmiths, painters, and plumbers. Both at Newport, R. I., and San Francisco are yeomanry schools, where the men are perfected for the clerical work of the Navy, to become expert stenographers, typewriters, bookkeepers, etc.[1]

In addition, there is the Hospital Corps, with schools at Newport and San Francisco. Schools for musicians are located at Norfolk and San Francisco. There are schools for machinists and coppersmiths at Charleston, and commissary schools at Newport and San Francisco. The school of aeronautics is located at Pensacola, and the gunners' school at Newport. Referring to the outlook for the bluejacket, the report well says, "He has the fourfold opportunity of serving his country, learning a trade, improving his mind in study, and travel."

CONFERENCES ON SPECIAL PHASES OF INDUSTRIAL EDUCATION.

During the period under review, the Bureau of Education has conducted a series of important conferences of specialists in indus-

[1] Annual Report of the Secretary of the Navy for the year ending Dec. 1, 1916.

trial education, superintendents of city schools, and others. These conferences were organized for the purpose of discussing certain special problems of industrial education and related topics, and of making the conclusions arrived at available to students of the subject by means of published reports.

(1) RAISING THE STANDARDS OF MANUAL ARTS INSTRUCTION IN THE PUBLIC SCHOOLS.

The vital relation between the right kind of manual training in the public schools and subsequent industrial education has been emphasized constantly by the Bureau of Education since the beginning of its interest in these fields. For the purpose of studying certain phases of this relationship, a conference of specialists engaged in the training of teachers was held at Peabody College for Teachers, Nashville, Tenn., December 7–9, 1916. Twenty-two institutions, from 11 States, were represented.

The topics discussed included: (1) Analysis of the contacts with possible future vocations that should be represented in the manual arts work, as a basis for determining the task of the institution that is to prepare the teachers. (2) How wide a range of shop subjects may a superintendent reasonably expect one teacher to handle efficiently in combination? (3) To what extent should preparation for vocation be a motive in the work of the elementary school? (4) Definite standards for manual arts work, and means for testing the results of teaching. (5) Problems of practice teaching in preparing teachers of manual training. (6) Qualifications of teachers of manual arts subjects. The following conclusions may be noted:

(1) The development of the manual arts has made a real contribution to other phases of education, in that the units of construction, serving as *units of instruction*, are setting good examples of organization for other subjects.

(2) The whole development of the manual arts seems to be pointing toward a solution of the problem of vocational education. Inevitably the majority of boys and girls are going into other than professional occupations, and we must recognize the importance of the "prevocational" value of manual arts work in the elementary school, furnishing, as such work does, a basis for the education of the whole people much broader and more complete than has been hitherto available. To discover how to assist young persons in the adjustment to possible future vocations is one of the most important educational problems before us.

(3) It is important to distinguish clearly: (*a*) Manual arts subjects offered primarily for general educational purposes; (*b*) subjects of-

fered primarily for the purpose of affording experience in practical activities fundamental to a variety of occupations, to be utilized as a basis for choice of vocation or of subsequent vocational courses; and (*c*) technical subjects offered primarily for the purpose of affording definite preparation for specific vocations.

(4) By opening the high-school shops during vacant periods to special classes of pupils of less than high-school preparation, the high schools should become the centers for whatever training is needed in many cities for some time to come.

(5) No manual arts teacher can reasonably be expected to teach more than two academic subjects in connection with the usual shop subjects demanded of him.

(6) The course of study in manual training is not to be thought of as simply a series of "stunts." The student should be confronted with a series of "problems" to be solved; and the solution of a problem should involve not only (*a*) study of materials, and (*b*) manipulation of tools and processes, and (*c*) the construction of some finished article, but also, and very important, (*d*) the planning and working out of the solution.

(7) There is need of more definite standards for measuring or testing the results of teaching, and for determining the progress of pupils in manual arts subjects.

(8) The work in manual arts affords a better opportunity for the preparation of lesson plans (in practice teaching) and careful analysis of processes and procedure than is to be found in any other subject in our training schools. Furthermore, through the emphasis on design an intellectual content has been put into manual arts work to the extent of making it stand out among all the intellectual studies.

(9) The tendency to employ teachers in manual arts and vocational subjects who are not properly qualified for the work to be undertaken is unfortunate, alike for the school, the teacher, the pupil, and the subject. Present methods of examining and certificating teachers, in some localities, are manifestly not adapted to insure the appointment of competent teachers of special subjects.

(10) It is worth while to call attention to the magnitude of the problem involved in producing a person who is a graduate of college, a broadly educated and cultured citizen, and at the same time a professionally trained educator, as well as a specialist in certain technical lines or in certain special vocations. In this we are attempting a tremendously difficult thing. There are involved here certain types of knowledge and skill that have never been required of the school-teacher heretofore; and, furthermore, these are to be measured by standards usually set up only in the various occupations concerned.

(2) POLICIES IN VOCATIONAL EDUCATION.

A conference of specialists was held in Indianapolis, Ind., February 23, 1917, to consider plans and policies in vocational education, and especially the types of investigation which should be undertaken.

(3) PREVOCATIONAL EDUCATION IN THE SMALL CITY.

A conference of superintendents of public schools in cities having a population of 10,000 to 25,000 was held in Kansas City, Mo., February 28, 1917, to consider the problems of prevocational education in the small city. Twenty-four States, the District of Columbia, and Canada were represented by superintendents, principals, and teachers. The general topic was "assisting pupils in the upper grammar grades to plan ahead." There were 371 cities in this population group according to the 1910 census, and the problem becomes complex when the great variety of conditions is considered. The small city can not expect to offer the same variety of work given in the larger centers, but if the State be taken as the unit, types of experience may be selected from the various industries of major importance, which are especially emphasized in the community.

The conference resulted in the following conclusions: (1) A larger amount of time is necessary for prevocational work than is now usually allotted to manual training or home economics in the grades. It is, further, not only a question of time, but of what is done in the time, hence (2) conditions must resemble those of industry with respect to materials, methods, and speed. A more formal procedure in the school is necessary, however, because of teaching large numbers. (3) The teacher has the responsibility of selecting the "type" experiences, and his success in this depends upon his knowledge and insight. Upon the superintendent rests the responsibility of selecting teachers who can do the job. (4) The equipment now used for manual training and home economics may be used for prevocational work, but there must be a wider range of work than is possible in woodworking and cooking and sewing in a 90-minute period weekly if the work is to be truly worth while as a basis for intelligent choice of future vocation.

(4) FEDERAL AID UNDER THE SMITH-HUGHES ACT AND THE PREPARATION OF TEACHERS.

A conference of specialists was held at the University of Missouri, December 13–15, 1917, to consider the general question of Federal aid under the Smith-Hughes Act, and the preparation of special teachers. Eighteen institutions engaged in the training of teachers in 12 States, as well as three State departments of public instruction, were represented. The topics discussed included: Federal aid

under the Smith-Hughes Act for the preparation of teachers of trade and industrial subjects; curricula for the preparation of teachers of the manual arts; present conditions in respect to practice teaching; a proposed program for practice teaching; problems connected with the examination and certification of special teachers; content of technical courses of study in the intermediate or junior high school. The following conclusions may be noted:

(1) The selection of properly qualified candidates for the teacher-training course is an important matter. Many difficulties will be obviated, and the line of action in specific cases will frequently seem more clear, if it be recognized that no individual may claim an inherent right to teach. The burden of proof, so to speak, should rest on the individual. He should be required to demonstrate his fitness for special service, rather than simply permitted to pursue an expressed desire to secure a position.

(2) New machinery and a new basis for the examination and certification of teachers are urgently needed. These should include means for testing and evaluating: (*a*) Vocational experience; (*b*) education and professional training; (*c*) personality; (*d*) ability to teach.

(3) For some time to come the scheme should include some effective provision for the training of teachers in service.

(4) Adequate time must be allowed in any curriculum in order to prepare teachers who will be competent to *teach* and *do* the given line of work.

(5) The institution should define more clearly (in terms of prospective teaching position) the aim or goal which it is proposed to assist the student to attain as the result of following any given curriculum.

(6) Observation and practice teaching are essential factors in the preparation of every teacher, and adequate provision should be made for them in normal-school curricula.

(7) It is more important to have a supply of the teachers needed in these new types of school than it is to enforce and perpetuate traditions in the matter of teachers' examinations and certificates.

(8) The discussion of the last topic on the program served to emphasize the following advantages and disadvantages of a school program involving a large number of "acquaintance courses," designed to afford the individual pupil opportunities for shopwork in each of several vocations:

Advantages.—(*a*) Wide vocational acquaintance; (*b*) remarkable basis for the cultivation of appreciation; (*c*) gets the interest of pupils in real work.

Disadvantages.—(*a*) Danger of lowering standards of workmanship (compared with a program attempting fewer lines of shop-

work); (*b*) technical processes in all lines necessarily confined to the beginning stages; (*c*) impossible to pursue any one line to mastery; (*d*) difficult to obtain teachers qualified to conduct the variety of shopwork proposed, especially in a small school or system.

(5) EXAMINATION AND CERTIFICATION OF INDUSTRIAL TEACHERS.

In order to consider the problems of examining and certificating industrial teachers, a conference of specialists was held in Philadelphia, February 22, 1918. Nineteen States and the District of Columbia were represented. The general topic was "Preliminary suggestions as to desirable basis and machinery for the examination and certification of special teachers." The following conclusions may be noted:

(1) Measures which depend on industry to supply teachers ready-made, or approximately so, must be regarded as merely temporary, and the machinery necessary for detecting such prospective teachers should not be permitted to determine the ultimate forms which such measures should take.

(2) A teacher capable of doing the job effectively represents an individual of a high type, who is already making a distinct success of the vocation in which he is engaged. To divert such persons into the work of teaching will require the payment of adequate salaries.

(3) Tests to be applied must be free from the defects of existing plans for examining and certificating teachers.

(4) Existing methods of examination should be modified so as to include adequate tests of personal characteristics.

(5) Suitable use should be made of practical tests and demonstrations of skill and ability of various kinds.

(6) It is essential that provision be made for examiners who are themselves competent in the field covered by the examination in each case, and whose ratings will thus command confidence and respect in that field.

(7) Every plan for examining and certificating teachers should be supplemented by a systematic and efficient plan of probationary teaching and training in service.

THE CONTINUATION SCHOOL.

One of the noteworthy factors in recent progress in vocational education is the continuation school. During the past decade a number of the States have enacted legislation encouraging the organization of schools of this type. Massachusetts, Wisconsin, and Pennsylvania, especially, have developed strong systems of continuation schools on a state-wide basis.

During the past two years a new stimulus has come from the Federal subsidies made available under the Smith-Hughes Act. As already noted, in 1918 there were 144 trade-continuation schools reporting to the Bureau of Education, located in 29 States and the District of Columbia.

The program of the National Education Association commission on the emergency in education contains a strong plea for a more general development of the continuation school, on a broader and more serviceable basis than has hitherto been characteristic of this institution in this country. The following paragraph is quoted from the recommendations of the commission:

> The continuation school is not an experiment in this country. In many of our industrial communities it exists and has proved its usefulness. But it needs extension upon a much larger scale than has as yet been contemplated if it is to counteract the danger that threatens. It needs a broadening of its scope, as well. With us the continuation school has developed as a phase of the movement for vocational education. As it exists in this country to-day, it is essentially a vocational school, limited in its instruction to those subjects that are directly related to employment of the student. This is a narrow conception—far narrower than the conception of the continuation school that has been taking root in England and France. Without sacrificing in any essential way its service to industry, the scope of the continuation school should be broadened to include those elements of general and liberal education that are so fundamental to sound democratic citizenship. It should supply to the boys and girls who must leave school and go to work something of the insight, something of the broader outlook, something of the stimulus to mental growth that the full-time high schools and colleges provide. It should be not a thing apart, a cheap makeshift for the unfortunate, but rather a recognized and well-supported unit in democracy's public school system—a temporary unit, let us hope, serving a useful purpose until the day when democracy decrees that every boy and girl to the age of at least 18 years shall have the privilege of attendance upon a full-time school the work of which is adapted both to his capacities as a learner and to his needs as a citizen.[1]

THE COOPERATIVE SCHOOL.

Much attention has been given recently to a special type of continuation school which has come to be known as the "cooperative school." Developed first in connection with the administration of the college of engineering, the plan has been successfully adapted to secondary school conditions, and is in operation in a number of cities.

The essential features of the plan seem to be:

(1) A definite cooperative arrangement between the educational institution and one or more industrial plants, by which the theoretical instruction is given by the institution and the practical experience is

[1] A National Program for Education—A Statement issued by the Commission on the Emergency in Education and the Program for Readjustment, National Education Association, Washington, D. C., June, 1918, pp. 24, 25.

given by the industries, and both are coordinated in a systematic and progressive educational program.

(2) Willingness on the part of the industrial plant to make such adjustments in equipment, processes, and methods as are necessary for promotion of the educational aim.

(3) Willingness on the part of the educational institution to eliminate nonessentials and to base theoretical instruction on what actually happens, and sufficient skill in organization to secure "*realization* of theory through its practical applications."

(4) Careful selection of employers, instructors, and student-workers, who are capable of being inspired with a vision of the responsibilities as well as the possibilities of the plan.

(5) Administration of the device of alternating periods in such a way as to secure continuous and progressive action on the process or job in the factory, as well as in the work of the student and the instructor in the school.

SPECIAL ADVANTAGES IN SECONDARY SCHOOLS.

In considering the advantages of the cooperative plan in the high school it is necessary to recognize that the first appeal is made to boys and girls not now in school—to those who, because of economic necessity or indifference, have left school to go to work or to loaf. The number of these has been variously estimated by different authorities, but it can hardly be doubted that it is in excess of 75 per cent of all minors over 14 years of age. If any considerable number of these can be brought back into the schools, it must be regarded as worth the effort.

In the next place, a strong appeal is made to many boys and girls who are in high school at the cost of much real sacrifice and self-denial. If some way can be found to meet a part of the cost they can and will remain in school.

Again, some lessons can be learned only through practical experience in the ways of the world. Some of these lessons include the proper relation between the material and the spiritual phases of life, the meaning and value of money, the meaning of work and wages, and the relation between them, the importance of life motives. The learning of these lessons is of as much consequence to one individual as to another, irrespective of economic, intellectual, or social status. The cooperative plan is a contribution to the solution of some of the problems involved, and hence its advantages should be placed within the reach of all youth.

With these considerations in mind, the special advantages of the cooperative plan in the high school may be summarized as follows:

(1) The safeguards thrown about the young people in their places of employment, through the supervision exercised by the school and

the cooperation of employers, show an almost unbelievable improvement over the conditions hitherto characterizing the employment of minors in many places.

(2) The cooperative plan makes it possible for some boys and girls to continue in school, because of wages earned on half-time. Prolonging the period of active connection with the school, and of contact with sympathetic teachers and advisers, confers an incalculable benefit on growing boys and girls, and should lead to a permanent impetus to better things.

(3) The plan will doubtless induce some to remain in school because the school work is thus made more interesting, and the student can see a more direct relation between schooling and the promotion of his own interests.

(4) The experiences involved promote a more earnest and thoughtful attitude toward work and the responsibilities of life.

(5) The plan discourages idleness and unwholesome use of time, since the longer school day and year are fully occupied with interesting activities.

(6) The opportunity to engage in gainful employment on half-time, under suitable auspices, has a definite prevocational value, assisting young persons to discover their tastes and probable aptitudes.

(7) The successful operation of a cooperative school or class affords a convincing demonstration that a reasonable amount of work, under proper conditions, can be made to contribute definitely to the development of youth, instead of being, as frequently heretofore, a demoralizing, disheartening, and stunting influence.

(8) The plan gives the student, at the very least, a foothold in some industry or occupation, so that he does not feel lost when the time comes to leave school and take up the responsibilities of self-support.

(9) It should be emphasized that this plan does not neglect the need for general education, but insures to each individual an amount of cultural and liberalizing education sufficient to serve as a foundation for further study if he later finds it possible to continue his education. He certainly gets more of the cultural side of education than he will if he leaves school entirely to go to work.

PREVOCATIONAL EDUCATION AND THE JUNIOR HIGH SCHOOL.

One phase of progress in vocational education has resulted from the enforced examination of proper methods and procedure in the preliminary or preparatory stages, which have come to be included under the generally accepted term of "prevocational education." This development is taking the form of a new interest in the special

educational problems presented by boys and girls during the last year or two of the period of compulsory schooling and the year or two immediately following.

During the past few years certain propositions seem to have been emerging above the surface of discussion: (1) The amount of schooling prescribed by law in most States is not sufficient to guarantee the general diffusion among the population of those qualities of high intelligence, sound health, good citizenship, and economic independence which are regarded as indispensable to our national life; (2) too many of our children for one reason or another, or for no reason, fail to go beyond the legal requirements in the matter of schooling, or even to attain them—for too many boys and girls the minimum has become the maximum; (3) modifications in school programs and methods have induced many children to remain in school beyond the age of compulsory attendance, who otherwise would have left, and doubtless will retain many others if made effective; (4) if we must accept the fact that many children will leave school at the earliest legal opportunity, we can at least give them something during the last year or two they are in school which will be more serviceable to them than the traditional formal curriculum of the elementary school.

In discussing this phase of current progress, Dr. Snedden says:

> The efforts now being made in various States to reorganize curricula of training and instruction for children 12 to 14 or 15 years of age constitute undoubtedly the most significant and important of contemporary movements in education. * * *
>
> The educational needs of pupils of 12 to 14 years of age are variable to such an extent that, if conditions of educational administration permitted, a number of courses of training and instruction, dissimilar as to many important elements and also even as to quality of results expected in common studies, should be provided.[1]

One of the concrete expressions of this new interest, and an attempt to realize the aim herein referred to, is the intermediate school, or junior high school. On this point Prof. Noyes well says:

> It is the glory of the junior high-school plan that it has arisen out of the study of the needs of the adolescent child, that it is a constructive effort to bridge the gap between the elementary school and the high school, by vitalizing the curriculum.[2]

THREE TYPES OF JUNIOR HIGH SCHOOL.

Prof. Noyes distinguishes three types of junior high school: (1) In this type the teaching is departmentalized, each teacher having

[1] David Snedden: Manual Training Magazine, Vol. XVIII, No. 4, December, 1916, p. 158.

[2] William Noyes: The Junior High School and Industrial Education, Manual Training Magazine, Vol. XIX, No. 5, January, 1918, pp. 153–157.

but one or two subjects. In some cases there have been notable changes made in curriculum, but in many such schools there has been no change in either the amount or the method of industrial work. (2) In this type specialization has been the determining factor. The boy and girl and their advisers decide, so far as possible, upon entering the seventh grade whether he or she is to go to college, to the farm, to the countinghouse, to the kitchen, to the factory, or to the studio. "That such courses are called optional should not divert attention from the fact that the effect of such an arrangement is early choice and specialization in vocational lines." (3) This type is founded on the principle that the boy and girl should have as great variety of experience as is practicable, and that definite vocational choices should be deferred as long as possible.

In its extreme form, the pupil would pass through a cycle, not only of industrial but also of commercial, agricultural, artistic, and academic activities. It assumes that at the age of early adolescence it is impossible to foresee what the predilections and abilities of any child, boy or girl, are going to be.

In America more than in any other country in the world free vocational choices are possible, and examples are constantly brought to our attention of men, and to a less degree of women, who try one vocation after another before settling into their life work. And if we grown-ups keep changing for so many years, by what right should we impose a choice on children under 15?[1]

THREE IMPORTANT ELEMENTS.

In the conduct of the industrial work in the junior high school it is important to maintain what Mr. Bowman calls the "vocational guidance flavor."[2] By way of further analysis he points out three important elements which should characterize the work:

(1) The boys should become familiar with tools, form habits of good workmanship, and come in contact with efficient shop organization in each line of work.

(2) They should learn how these constructions are made in industry, how the things they do in the shop are placed "outside," and gain some industrial intelligence and insight.

(3) They should gain information through studies, discussions, talks, visitations, and readings about wages, chances for advancement, working conditions, and the like, in the work outside related to that which they are doing in school. This work will lead to investigations of lines not represented in the school.[2]

The junior high-school organization provides, or may provide, most favorable conditions for the vocational guidance and prevocational phases of education. That the movement to introduce the junior high-school plan seems to be spreading, as noted elsewhere in the Report of the Commissioner of Education, is significant of further developments to be expected in these fields.

[1] William Noyes: The Junior High School and Industrial Education. Manual Training Magazine, Vol. XIX, No. 5, January, 1918, pp. 155-157.

[2] Clyde A. Bowman: Industrial Education for the Smaller Community. Manual Training Magazine, Vol. XVIII, No. 6, January, 1917, pp. 177-186.

As has been pointed out by a number of students of current tendencies in secondary education, however, it is possible in this as in other things to have the form without the substance. Some such systems have advertised the introduction of the junior high-school plan, whereas examination will show that nothing more has been done than to take the seventh and eighth grades from the elementary school, and the ninth grade from the high school, and put the three together in a building of their own.

It is of the utmost importance that there shall be a more definite and authoritative determination of the *purposes* of prevocational education, the junior high school, and other departmental or special schemes of organization, and then a careful checking up of the means employed and the results secured. Formal reorganization is of no avail if actual results desired are not secured.

MANUAL TRAINING IN SECONDARY SCHOOLS RECEIVES NEW IMPETUS.

It has been well said that there are two products of the war which we should not willingly relinquish from our national life: "One is the spirit of thrift which has been brought out by the Liberty Loan campaigns; the other is the enthusiasm for education which has been developed by our training camps."[1]

THE NEW EDUCATION.

This enthusiasm for education will necessarily be colored by the experiences through which we have passed, and will reflect the new spirit of patriotism and service. Education must continue to provide for culture and self-development, but from now on it must do more. It has been shown that it is possible for education to develop efficiency of the most rigorous and exacting type, and at the same time to generate idealism and nobility of motive. Even the educational program of our training camps, which many thought of only in terms of inexorable military discipline and short cuts to well-defined objectives, made definite provision for the humanistic element—the "morale" of the troops.

It has been discovered that education can be vocational *and* cultural; henceforth we shall not be satisfied with education that is not both. The new point of view that seems to be making definite headway suggests again the essential unity of the thing we call education.

The immediate effect upon education of the war and its concomitant events unquestionably will be a new emphasis on certain special phases: (1) Education for health, (2) education for vocation, and

[1] Outlook, editorial; Dec. 18, 1918, p. 613.

(3) education for citizenship. The urgent need for attention to these matters has been brought home to the consciousness of the people as never before. It is interesting to note that, contrary to the prophecies of some of our educational leaders, the Nation has been afforded a most convincing demonstration that these objectives are positively attainable without the sacrifice of those finer qualities of human life and relationships—the humanistic element—and, what is even more to the point, the machinery and methods for reaching these ends were in process of being definitely worked out.

One of the most helpful and constructive contributions, most needed at the present time, would be the formulation of policies of vocational education which will show clearly and definitely the relationships which a program for vocational education should bear to a program for health education, to a program for citizenship education, to a program for complete education.

In the past this country has suffered and been handicapped by the lack of engineers, scientists, and skilled mechanics, and took no adequate action. During the war the point was reached where measures for remedying this lack became an imperative necessity, and hence schemes for vocational and technical training were developed on an unheard-of scale. We came to realize that we must make a more determined effort to secure for a much larger proportion of our people a serviceable amount of technical and scientific training. In the accomplishment of this purpose we must vitalize the work of the elementary and secondary schools, as well as the higher engineering and scientific schools, and stimulate them to do their part in this great program.

SUGGESTIONS OF EDUCATORS.

For the purpose of aiding and guiding this development, the Commissioner of Education summoned to Washington during the week of May 20, 1918, a group of educators, and requested them to cooperate in the formulation of the outlines of a definite program that might be submitted to school authorities for adoption. The committee included men from the staffs of city superintendents of public schools, principals of high schools, representatives of trade and technical schools, and teacher-training institutions. This group was representative alike of the technical, administrative, and instructional phases of the problems involved, and pooled the results of extensive and varied experience in both education and industry.

Consequently, the program and recommendations of this committee, as set forth in a report published by the Bureau of Education,[1]

[1] Industrial Arts in Secondary Schools, etc., Secondary School Circular No. 4, September, 1918, Bureau of Education, Washington, D. C.

carry great weight, and deserve the careful study of school authorities. Included within the brief compass of 30 pages may be found definite, practical suggestions, some of which may be carried out in the seventh and eighth grades and high-school years in almost any school system in the country.

RECOMMENDATIONS.

The recommendations of the committee may be summarized briefly, as follows:

(1) Boards of education should make it possible to offer training preparatory to some of the occupations specified, at least the foundation work courses, in practically all high schools.

(2) Wherever practicable the cooperative shopwork plan (part-time division between schooling and employment) should be introduced, under the direct supervision of the public-school authorities.

(3) The daily, weekly, and annual school sessions should be lengthened.

(4) Wherever practicable a number of elective two-year vocational courses should be offered, with the following division of time: (*a*) 15 hours per week in shopwork; (*b*) 15 hours per week in related and general subjects.

(5) For industrial arts work in the general high school, the minimum amount of time should be 10 hours per week, for a period of three years.

(6) From 4 to 10 periods per week in the seventh and eighth grades should be devoted to handwork, with the emphasis on practical shopwork in wood and metal preparatory to the work suggested for the high school.

Other recommendations relate to consolidated and rural schools, and to the importance of securing properly qualified teachers to conduct the work.

The underlying purpose of the program and the recommendations presented in this report is twofold: (*a*) To increase greatly the number of boys and young men receiving instruction in technical and industrial work; and (*b*) to increase the practical effectiveness of the instruction by bringing about a more definite coordination between the work of the schools and the needs of the individual and the Nation.

CRITICISM EXAMINED.

In conclusion, it seems desirable to refer again to certain objections which have been raised to the philosophy underlying the vocational phases of public education. There are still those who appear to be unable or unwilling to perceive that education must be something more than mere cultivation of the intellect. It is difficult to

argue with such persons on the basis of the current conception of publicly supported education in a democracy, which is that education should include at least: (1) Education for citizenship and civic responsibilities; (2) education for health; (3) education for economic self-support, the vocation; (4) education for the human relationships, culture, refinement, use of leisure time, the spiritual values.

In particular, the notion that children who are about to leave school permanently, or who, having left, are recalled for the purpose, may safely be given specific instruction that will assist in getting an economic start in life—this notion has proved a stumbling-block to some who believe that this process involves the sacrifice of something of supreme value to the child and to the State. An attentive reading of certain criticisms which have appeared suggests that the argument, if reduced to the form of a syllogism, would read:

Major premise: Many children leave school as soon as they are legally free to do so, regardless of whether they are qualified to look after themselves or not.

Minor premise: An effective program of vocational education may induce numbers of such children to remain in school longer than they otherwise would in order to prepare for some wage-earning position.

Conclusion: This additional schooling definitely and permanently prescribes the future careers of the children, making it impossible that they shall ever be other than "hewers of wood and drawers of water," and is therefore an offense against both the individual and society.

The principal defect in this argument is that the process of reasoning is invalid, and the conclusion *non sequitur*. Students of education have repeatedly pointed out the fallacy of assuming that a vocation once entered upon by a young person must be followed through life.

Furthermore, the obvious alternative, and the only one seriously proposed, is to accept the fact that the overwhelming majority of boys and girls will continue to drop out of school before attaining adequate preparation for life's duties. And it is precisely against amiable acquiescence in this ineffectual alternative that current popular interest in education has been aroused.

VOCATIONAL EDUCATION NOT AN ENCROACHMENT.

One of the most conclusive summaries of the case against the criticism referred to is a statement recently prepared by Dr. Snedden. It is in answer to the thoughtlessly repeated charge that vocational education seeks (1) to destroy or supplant the public school, and (2) to establish or substitute a narrow type of education which, by teaching mere skill of hand, will limit the possible futures of young people and prescribe for them careers without prospect of growth and development.

In reply to these two charges it is aptly pointed out that, wherever vocational schools have been established, the entrance conditions are substantially the completion of the requirements of compulsory school attendance. In most States these requirements are expressed in terms of age of pupil and school grade completed.

> In other words, no youth may enter a vocational school until he has reached the point where he is equally free to enter the shop or office as a full-time worker, or to spend his (or her) days exclusively at farm or home work. To the charge sometimes made that the specialized vocational school is "narrowing," it is a fair retort to question whether it is more "narrowing" than the place in the department store, the specialty in the factory, or the daily routine of office, farm, or home. For these are certainly the prevailing alternatives.[1]

In this connection the following statement made by the Secretary of Commerce in President Wilson's Cabinet, and member of the Federal Board for Vocational Education, is pertinent:

> Let me say that industrial education is not educating men into the mill. I have been told that it was, and that what was sought was to train a working class; that it attempted not only to train our children into the mills, but also to develop class legislation on their account. The allegations are utterly untrue. Industrial education is for every phase of industry, and those who teach it most and urge it strongest are against confining it to any narrow groove of single processes.[2]

Instead, therefore, of being chargeable with limiting the opportunities or prescribing the future careers of youth, the vocational school must fairly be credited not only with providing a substantial extension of educational opportunity, but also with equipping boys and girls with the means to make their careers whatever they will. Every step taken in the direction of providing practical education preparing for wage-earning efficiency will lessen rather than increase the handicaps which beset those boys and girls who can not look forward to college or university education.

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[1] David Snedden: Publicly Supported Vocational Education: Is it Undemocratic[;] Manual Training Magazine, Vol. XVIII, No. 8, April, 1917, pp. 321–324.

[2] William C. Redfield; Manual Training Magazine, Vol. XVIII, No. 6, April, 1917, p. 252.